

WENMING DONG

Senior Scientific Engineering Associate, Earth Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720. Tel: 510-486-7499; Email: WenmingDong@lbl.gov

EDUCATION

Ph.D., Nuclear Physics, Lanzhou University, Lanzhou, China, 2000. (Thesis: Influence of natural organic matter on sorption and transport of radionuclides).

M.S., Radiochemistry, Lanzhou University, Lanzhou, China, 1993. (Thesis: Complexation of humic substances with radionuclides).

B.S., Chemistry, Northwest Normal University, Lanzhou, China, 1987.

Research Interests

My research interests focus on the environmental biogeochemistry and radiochemistry, including (1) design and conduct of laboratory and field-scale investigations for evaluating the speciation, sorption, transformation, transport, bioavailability and remediation of radionuclides and heavy metals in contaminated aquifer environments and (2) characterization of natural organic matter (e.g., humic substances) from sediments, soils and waters, and their interactions with radionuclides, heavy metals and minerals.

Professional Experience

2009-Present: Senior Scientific Engineering Associate, Earth Science Division, Lawrence Berkeley National Laboratory (LBNL).

2004-2009: Post-doctoral researcher and research associate, Environmental Science Division, Oak Ridge National Laboratory (ORNL).

2002-2004: Postdoctoral research fellow, Department of Geography and Environmental Engineering, Johns Hopkins University (JHU).

2000-2001: Research associate, Institute of Nuclear Physics, Paris University-XI, France.

1993-2000: Assistant/associate professor, Radiochemistry Laboratory, Lanzhou University, China.

Publications in Peer-Reviewed Journals (selected, total 50+)

1. **Dong W.** and J. Wan, Additive surface complexation modeling of uranium(VI) adsorption onto quartz-sand dominated sediments, *Environ. Sci. Technol.*, (revised version submitted in review).
2. Tokunaga T.K., J. Wan, J.W. Jung, T.W. Kim, Y. Kim and **W. Dong**, Capillary pressure and saturation relations for supercritical CO₂ and brine in sand: high-pressure Pc(Sw) controller/meter measurements, and capillary scaling predictions, *Water Resour. Res.*, 49, 4566–4579, 2013.
3. Boggs M.A., M. Islam, **W. Dong** and N.A. Wall, Complexation of Tc(IV) with EDTA at varying ionic strength of NaCl, *Radiochim. Acta*, 101, 13-18, 2013.
4. Wall N.A., N. Karunathilake and **W. Dong**, Interactions of Tc(IV) with citrate in NaCl media, *Radiochim. Acta*, 101, 111-116, 2013.

5. **Dong W.**, T. K. Tokunaga, J. A. Davis, and J. Wan, Uranium(VI) adsorption and surface complexation modeling onto background sediments from the F-Area Savannah River Site, *Environ. Sci. Technol.*, 46, 1565–1571, 2012.
6. Wan J., T. K. Tokunaga, **W. Dong**, M. E. Denham, and S. S. Hubbard, Persistent Source Influences on the Trailing Edge of a Groundwater Plume, and Natural Attenuation Timeframes: The F-Area Savannah River Site, *Environ. Sci. Technol.*, 46, 4490–4497, 2012.
7. **Dong W.**, Y. Bian, L. Liang, and B. Gu, Binding constants of mercury and dissolved organic matter determined by a modified ion exchange technique, *Environ. Sci. Technol.*, 45, 3576-3583, 2011.
8. Wan J., **W. Dong** and T. K. Tokunaga, Method to attenuate U(VI) mobility in acidic waste plumes using humic acids, *Environ. Sci. Technol.*, 45, 2331-2337, 2011.
9. Gu B., **W. Dong**, L. Liang and N.A. Wall, Dissolution of technetium(IV) oxide by natural and synthetic organic ligands under both reducing and oxidizing conditions, *Environ. Sci. Technol.*, 45, 4771–4777, 2011.
10. **Dong W.**, L. Liang, S C. Brooks, G. Southworth and B. Gu, Roles of dissolved organic matter in the speciation of mercury and methylmercury in a contaminated ecosystem in Oak Ridge, Tennessee, *Environ. Chem.*, 7, 94-102, 2010.
11. Gu B., Y. Bian, C. L. Millera, **W. Dong**, X. Jiang and L. Liang, Mercury reduction and complexation by natural organic matter in anoxic environments, *PNAS*, Early Edition, 1-5, 2010.
12. Boggs M.A., **W. Dong**, B. Gu and N. A. Wall1, Complexation of Tc(IV) with acetate at varying ionic strengths, *Radiochim. Acta*, 98, 583-587, 2010.
13. **Dong W.** and S. C. Brooks, Formation of aqueous $MgUO_2(CO_3)_3^{2-}$ complex and uranium anion exchange mechanism onto an exchange resin, *Environ. Sci. Technol.*, 42, 1979-1983, 2008.
14. **Dong W.** and Brooks S.C., Determination of the formation constants of ternary complexes of uranyl and carbonate with alkaline earth metals (Mg^{2+} , Ca^{2+} , Sr^{2+} , and Ba^{2+}) using anion exchange method, *Environ. Sci. Technol.*, 40, 4689-4695, 2006.
15. **Dong W.**, G. Xie, T.R. Miller, M.P. Franklin, T. Palmateer Oxenberg, E.J. Bouwer, W.P. Ball, and R.U. Halden. Sorption and bioreduction of hexavalent uranium at a military facility by the Chesapeake Bay, *Environ. Poll.*, 142, 132-142, 2006.
16. **Dong W.**, W. P. Ball, C. Liu, Z. Wang, A.T. Stone, J. Bai, and J. M. Zachara. Influence of calcite solids and dissolved calcium on U(VI) sorption to a Hanford subsurface sediment *Environ. Sci. Technol.*, 39, 7949-7955, 2005.
17. Wang X., **W. Dong** and Z. Tao, A multitracer study on the adsorption of 32 elements on a natural hematite (α - Fe_2O_3): effects of pH and fulvic acid, *Colloids & Surfaces A: Physicochim. Eng. Aspects*, 223, 135-143, 2003.
18. Tao Z. and **W. Dong**, Additivity rule and its application to the sorption of radionuclides on soils, *Radiochim. Acta*, 91, 299-304, 2003.
19. **Dong W.**, H. Zhang, M. Huang and Z. Tao, Use of the ion exchange method for the determination of stability constants of trivalent metals complexes with humic and fulvic acids I. Eu^{3+} and Am^{3+} complexes in weakly acidic conditions, *App. Radiat. Isotopes*, 56, 959-965, 2002.
20. **Dong W.**, W. Li and Z. Tao, Use of the ion exchange method for the determination of stability constants of trivalent metals complexes with humic and fulvic acids II. Tb^{3+} , Yb^{3+} and Gd^{3+} complexes in weakly alkaline conditions, *App. Radiat. Isotopes*, 56, 967-974, 2002.
21. Wang X., **W. Dong**, Z. Qin and Z. Tao, Sorption and desorption of Co(II) on alumina: mechanisms and effect of humic substance, *App. Radiat. Isotopes*, 56, 765-771, 2002.

22. Zhang H. **W. Dong**; M. Huang and Z. Tao, Characterization and differentiation of chemical heterogeneity in humic substances by continuous intrinsic proton affinity distribution, *Adsorp. Sci. Technol.*, 20, 337-345, 2002.
23. **Dong W.**, Z. Guo, J. Du, L. Zheng and Z. Tao, Sorption characteristics of zinc(II) by calcareous soil - radiotracer study, *App. Radiat. Isotopes*, 54, 371-375, 2001.
24. **Dong W.**, X. Wang , Z. Qin, C. Zhou and Z. Tao, Preparation of multitracer from Th(NO₃) irradiated by ⁴⁰Ar ion beam, *J. Radioanal. Nucl. Chem.*, 250(2), 263-266, 2001.
25. **Dong W.**, X. Wang, A. Wang, X. Bian, Y. Gong, J. Du and Z. Tao, Comparative study on sorption / desorption of radioeuropium on alumina, bentonite and red earth: effects of pH, ionic strength, humic substance, iron oxides in red earth, *App. Radiat. Isotopes*, 54, 603-601, 2001.
26. Wang X., **W. Dong**, Z. Guo, H. Gao, J. Du and Z. Tao, Adsorption and Desorption of Radioiodine in a calcareous soil, *Adsorp. Sci. Technol.*, 19(9), 711-719, 2001.
27. Wang X., **W. Dong**, Z. Qin and Z. Tao, A multitracer study on the adsorption of 36 elements on a silica: effects of pH and fulvic acid, *J. Radioanal. Nucl. Chem.*, 250(3), 491-490, 2001.
28. Wang X., **W. Dong** , Y. Gong, C. Wang and Z. Tao, Sorption characteristics of Radioeuropium on bentonite and kaolinite, *J. Radioanal. Nucl. Chem.*, 250(2), 67-270, 2001.
29. **Dong W.**, X. Wang, Y. Shen, X. Zhao and Z. Tao, Sorption characteristics of radiocobalt on bentonite and kaolinite, *J. Radioanal. Nucl. Chem.*, 245(2), 431-434, 2000.
30. Wang X., **W. Dong**, X. Dai, A. Wang and Z. Tao, Sorption and desorption of Eu and Yb on alumina: Mechanisms and effect of fulvic acid, *App. Radiat. Isotopes*, 52, 165-173, 2000.
31. Wang X., **W. Dong**, Z. Li, J. Du and Z. Tao, Sorption and desorption of radiocesium on red earth and its solid components: Relative contribution and hysteresis, *App. Radiat. Isotopes*, 52, 813-819, 2000.
32. **Dong W.**, X. Wang, J. Du, D. Wang and Z. Tao, Sorption and desorption of radioselenium on red earth and its solid components, *J. Radioanal. Nucl. Chem.*, 240(3), 715-719, 1999.
33. **Dong W.**, X. Wang, J. Du, X. Bian, F. Ma and Z. Tao, Sorption and desorption characteristics of Eu (III) on a red earth: Results from batch and column investigations, *J. Radioanal. Nucl. Chem.*, 242(3), 793-797, 1999.
34. **Dong W.**, W. Li et al., Effects of ionic strength and pH on the stability constants of the complexes of Co(II) with soil fulvic acid, *J. Radioanal. Nucl. Chem.*, 241(2), 351-353, 1999.
35. Wang X., **W. Dong**, J. Du and Z. Tao, Sorption and desorption of radiocesium on calcareous soil: Results from batch and column investigations, *J. Radioanal. Nucl. Chem.*, 240(3), 783-787, 1999.
36. Tao Z. and **W. Dong**, Comparison between the one pK and two pK models of the metal oxide-water interface, *J. Colloid Interface Sci.*, 208, 248-251, 1998.
37. Du J., **W. Dong**, X. Wang, H. Liu and Z. Tao, Sorption and desorption of radiocesium on Calcareous soil and its solid components, *J. Radioanal. Nucl. Chem.*, 231(1-2) 183-185, 1998.
38. Tao Z. and **W. Dong**, Use of anion exchange method for determination of stability constants of metal-humic substance complexes, *Radiochim. Acta*, 73, 1-3, 1996.
39. Du J., **W. Dong**, Wang X. and Z. Tao, Sorption and desorption of radiostrontium on calcareous soil and its solid components, *J. Radioanal. Nucl. Chem.*, 203(1), 31-36, 1996.
40. Tao Z., **W. Dong**, J. Du and Z. Guo, Sorption and desorption of radioiodine on a calcareous soil and its solid Components, *J. Radioanal. Nucl. Chem.*, 214(2), 147-157, 1996.